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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,405	04/21/2004	Kenneth L. Inman	2174-102	5964

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EXAMINER	
BOYCE, ANDRE D	
ART UNIT	PAPER NUMBER
3623	

NOTIFICATION DATE	DELIVERY MODE
12/20/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/829,405	INMAN ET AL.	
	Examiner	Art Unit	
	Andre Boyce	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-13,15-21,23-29,31-37 and 39-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-13,15-21,23-29,31-37 and 39-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/17/10 has been entered.

2. Claims 1, 9, 17, 25, 37. 39 and 40 have been amended. Claims 1-5, 7-13, 15-21, 23-29, 31-37 and 39-42 are pending.

3. The previously pending rejection to claims 40-42 under 35 USC § 112, second paragraph, has been withdrawn.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 9-13, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim elements are means (or step) plus function limitations that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 37, 39 and 40-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Based upon consideration of all of the relevant factors with respect to the claim as a whole, claim(s) 37, 39 and 40-42 are held to claim an abstract idea, and is/are therefore rejected as ineligible subject matter under 35 U.S.C. 101 *Bilski v. Kappos*, 95 USPQ2d 1001 (U.S. 2010). The rationale for this finding is explained below:

In order for a method to be considered a "process" under §101, a claimed process must either: (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing.

With respect to independent claims 37 and 40, the claim language recites a computer implemented method, including receiving, in a computer system, a base level data set, defining a first segmentation tree; receiving, in the computer system, an alternate (level) data set, etc. Here, there is insufficient recitation of a machine or transformation, and/or wherein involvement of machine, or transformation with the steps is merely nominally, insignificantly, or tangentially related to the performance of the steps, e.g., data gathering, or merely recites a field in which the method is intended to be applied.

Claims 39, 41, and 42 are rejected based upon the same rationale, wherein the claim language does not include the required tie or transformation.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1-5, 7-13, 15-21, 23-29, 31-37 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (US 2002/0184077), in view of Heckerman et al (USPN 6,742,003).

As per claim 1, Miller et al disclose a method for segmenting a population (i.e., segmentation system for classifying households into market segments, ¶ 0017), comprising: defining a base level population segmentation tree associated with a base level data set at a first top level node having a base precision with a base segmentation tree defining module (i.e., population at node 1, figure 3 and partitioning module 510, figure 5, ¶ 0021, including nodes 2-13 of figure 3 based upon decisions 1-6); defining a set of alternative level variables with an alternative level variable defining module (i.e., partitioning module 510, figure 5), the set of alternative level variables associated with an alternative level data set at a second top level node and useable as substitutes in subsequent nodes of the population segmentation tree to create a substitute level tree (i.e., populations split according to a plurality of decisions, ¶ 0021, including nodes 2-13 of figure 4 based upon decisions 1-6, but implemented in a different arrangement); determining, with a substitute split value determining module (i.e., partitioning module 510, figure 5), substitute split values for each subsequent node of the substitute level tree based on the base level data set at the first top level node and the alternative level data set at

the second top level node to enable up and down shifting (i.e., splits based upon a different decision, ¶ 0022), the substitute split value determining module to calculate the substitute split values that maintain a percentage split value of the substitute level tree that is equal to a percentage split value of the base level population segmentation tree (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5), and outputting the substitute level tree having the substitute split values to a user (i.e., split views area of display, including all splits made as <= value versus > value, ¶ 0057).

Miller et al does not explicitly disclose an alternative level data set at a second top level node having an alternate precision different than the base level data set, a substitute level tree having a substitute precision different from the base precision, and up and down shifting between levels of the base precision and the substitute precision.

Heckerman et al disclose segment viewer 1500, which operates on case and cluster data stored within database 1360, automatically generates appropriate clusters of cases and associated segments; and in response to user commands provided over line 1367 from a user, such as a business manager or data analyst that accesses commerce server 1330, compares user selected segments, and generates, on line 1363, a graphical display, based on calculated scored similarity values, of segment hierarchy. Segments are clusters of cases that exhibit similar behavior, such as users on a given site, and have similar properties, such as age or gender. A segment consists of a summary of the database records (cases) that

belong to it. (column 21, lines 52-63). Furthermore, in accordance with our inventive teachings, similar segment groups can be merged together to form higher-level segment groups, with this operation iteratively continuing until a single, high-level segment group is formed representing all the cases in a dataset (an entire population). The segment groups form a hierarchy from which a user, such as a business manager or data analyst, can analyze trends and discover correlations within the case data at different levels of the segment hierarchy (column 22, lines 1-9). As such, Heckerman et al discloses developing alternate level data sets of varying precisions, each having a single high-level top node formed by clustering cases that exhibit similar behavior.

It would have been obvious to one having ordinary skill in the art to include an alternative level data set at a second top level node having an alternate precision different than the base level data set, a substitute level tree having a substitute precision different from the base precision, and up and down shifting between levels of the base precision and the substitute precision in Miller et al, as seen in Heckerman et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claims 2-4, Miller et al does not explicitly disclose determining whether a level shift is required, determining segments using the base level tree when no level

shift is required, and determining segments using another level when a level shift is required.

Heckerman et al disclose segment viewer 1500, which operates on case and cluster data stored within database 1360, automatically generates appropriate clusters of cases and associated segments; and in response to user commands provided over line 1367 from a user, such as a business manager or data analyst that accesses commerce server 1330, compares user selected segments, and generates, on line 1363, a graphical display, based on calculated scored similarity values, of segment hierarchy. Segments are clusters of cases that exhibit similar behavior, such as users on a given site, and have similar properties, such as age or gender. A segment consists of a summary of the database records (cases) that belong to it. (column 21, lines 52-63). Furthermore, in accordance with our inventive teachings, similar segment groups can be merged together to form higher-level segment groups, with this operation iteratively continuing until a single, high-level segment group is formed representing all the cases in a dataset (an entire population). The segment groups form a hierarchy from which a user, such as a business manager or data analyst, can analyze trends and discover correlations within the case data at different levels of the segment hierarchy (column 22, lines 1-9).

It would have been obvious to one having ordinary skill in the art to include segmentation validity testing and level shifting in Miller et al, as seen in Heckerman et al, since the claimed invention is merely a combination of old elements, and in the

combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 5, Miller et al disclose determining at least one segment using the substitute level tree (i.e., terminal nodes 4, 5, 8, 10-13, figure 4).

As per claim 7, Miller et al disclose the split values are for income and age (¶ 0005).

As per claim 8, Miller et al disclose verifying the results of a segment determination when using substitute values (i.e., optimization of the segmentation, ¶ 0046).

As per claim 33, Miller et al disclose wherein the base level population segmentation tree is based on at least one of demographic data or behavioral data for a set of consumers (i.e., generating a plurality of classification trees based on demographic and behavioral data, ¶ 0018);

Claims 9-13, 15-16 and 34 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the system claims corresponding to the method claims.

Claims 17-21, 23-24 and 35 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the software system claims corresponding to the method claims.

Claims 25-29, 31-32 and 36 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the software product claims corresponding to the method claims.

As per claim 37, Miller et al disclose a method to segment a population (i.e., segmentation system for classifying households into market segments, ¶ 0017) comprising: receiving, in a base segmentation tree defining module, a base level data set at a first top level node having a first precision (i.e., data set of figure 3 including a population at node 1 split based on decision 1 into nodes 2 and 3); defining a first segmentation tree in accordance with the base level data set, the first segmentation tree comprising a plurality of base level variables, each variable associated with a base level sub-node subsequent to the first top level node and having a corresponding base level value (i.e., nodes 2-13 of figure 3 based upon decisions 1-6); receiving, in a substitute split value determining module, an alternate data set at a second top level node (i.e., data set of figure 4 including a population at node 1 split based on decision 5 into nodes 2 and 3); defining a plurality of alternate level variables based on the base level data set at the first top level node and the alternate level data set at the second top level node, each alternate level variable associated with an alternate level sub-node subsequent to the second top level node and having a corresponding alternate level value (i.e., nodes 2-13 of figure 4 based upon decisions 1-6, but implemented in a different arrangement), and defining a second segmentation tree in accordance with the alternate data set (figure 4).

Miller et al does not explicitly disclose receiving, in the computer system, an alternate data set having a second precision different from the first precision of the base level data set, a corresponding alternate level value to facilitate at least one of upshifting or downshifting relative to the base level data set, and the second segmentation tree comprising the plurality of alternate level variables and corresponding alternate level values representative of the population.

Heckerman et al disclose segment viewer 1500, which operates on case and cluster data stored within database 1360, automatically generates appropriate clusters of cases and associated segments; and in response to user commands provided over line 1367 from a user, such as a business manager or data analyst that accesses commerce server 1330, compares user selected segments, and generates, on line 1363, a graphical display, based on calculated scored similarity values, of segment hierarchy. Segments are clusters of cases that exhibit similar behavior, such as users on a given site, and have similar properties, such as age or gender. A segment consists of a summary of the database records (cases) that belong to it. (column 21, lines 52-63). Furthermore, in accordance with our inventive teachings, similar segment groups can be merged together to form higher-level segment groups, with this operation iteratively continuing until a single, high-level segment group is formed representing all the cases in a dataset (an entire population). The segment groups form a hierarchy from which a user, such as a business manager or data analyst, can analyze trends and discover correlations within the case data at different levels of the segment hierarchy (column 22, lines 1-

9). As such, Heckerman et al discloses developing alternate level data sets of varying precisions, each having a single high-level top node formed by clustering cases that exhibit similar behavior. It would have been obvious to one having ordinary skill in the art to include an alternate data set having a second precision different from the first precision of the base level data set, a corresponding alternate level value to facilitate at least one of upshifting or downshifting relative to the base level data set, and the second segmentation tree comprising the plurality of alternate level variables and corresponding alternate level values representative of the population in Miller et al, as seen in Heckerman et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 39, Miller et al disclose calculating the corresponding alternate level value to maintain a similar percentage split between the base level node and the alternate level node (i.e., nodes 2 and 3 represent an equal percentage split using the same population node 1, figures 4 and 5).

As per claim 40, Miller et al disclose a method to segment a population (i.e., segmentation system for classifying households into market segments, ¶ 0017) comprising: receiving, in a base segmentation tree defining module, a base level data set at a first top level node having a first precision; defining a segmentation tree in accordance with the base level data set (i.e., data set of figure 3 including a

population at node 1 split based on decision 1 into nodes 2 and 3), the segmentation tree having a plurality of decision sub-nodes subsequent to the first top level node, each comprising a base level variable and a base level value (i.e., nodes 2-13 of figure 3 based upon decisions 1-6); calculating a percentage split for each of the plurality of decision sub-nodes of the segmentation tree, wherein the percentage split is calculated at the corresponding base level value for the corresponding base level variable (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5); receiving, in a substitute split value determining module, an alternate level data set at a second top level node; selecting an alternate level variable from the alternate level data set for each of the plurality of decision sub-nodes of the segmentation tree (i.e., data set of figure 4 including a population at node 1 split based on decision 5 into nodes 2 and 3); calculating an alternate level value of the alternate level variable for each of the plurality of decision sub-nodes, where the alternate level value is calculated to maintain the percentage split for each of the plurality of corresponding decision sub-nodes (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5), and outputting an alternate level segmentation tree based on the base level data set at the first top level node and the alternate level data set at the second top level node, the alternate level segmentation tree representative of the population associated with the alternate level data set (i.e., split views area of display, including all splits made as <= value versus > value, ¶ 0057).

Miller et al does not explicitly disclose receiving an alternate level data set having a second precision, and the alternate level variable selected in association with a relative similarity to the base level variable.

Heckerman et al disclose segment viewer 1500, which operates on case and cluster data stored within database 1360, automatically generates appropriate clusters of cases and associated segments; and in response to user commands provided over line 1367 from a user, such as a business manager or data analyst that accesses commerce server 1330, compares user selected segments, and generates, on line 1363, a graphical display, based on calculated scored similarity values, of segment hierarchy. Segments are clusters of cases that exhibit similar behavior, such as users on a given site, and have similar properties, such as age or gender. A segment consists of a summary of the database records (cases) that belong to it. (column 21, lines 52-63). Furthermore, in accordance with our inventive teachings, similar segment groups can be merged together to form higher-level segment groups, with this operation iteratively continuing until a single, high-level segment group is formed representing all the cases in a dataset (an entire population). The segment groups form a hierarchy from which a user, such as a business manager or data analyst, can analyze trends and discover correlations within the case data at different levels of the segment hierarchy (column 22, lines 1-9). As such, Heckerman et al discloses developing alternate level data sets of varying precisions, each having a single high-level top node formed by clustering cases that exhibit similar behavior. It would have been obvious to one having

ordinary skill in the art to include an alternate level data set having a second precision, and the alternate level variable selected in association with a relative similarity to the base level variable in Miller et al, as seen in Heckerman et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 41, Miller et al disclose upshifting from the base level data set to the alternate level data set when the alternate level data set is more precise than the base level data set (i.e., switch from the data set of figure 3 to the data set of figure 4, based upon the optimization of a measure of behavior and the demographic data, ¶ 0024).

As per claim 42, Miller et al disclose downshifting from the base level data set to the alternate level data set when the alternate level data set is less precise than the base level data set (i.e., switch from the data set of figure 3 to the data set of figure 4, based upon the optimization of a measure of behavior and the demographic data, ¶ 0024).

Response to Arguments

10. In the Remarks, with respect to the 35 USC §101 rejection, Applicants respectfully submit that such claims are tied to particular machines. In particular, independent claims 37 and 40 are tied to, in part, a base segmentation tree defining

module and a substitute split value determining module to perform the claimed procedures. As discussed above, and set forth in *Bilski v. Kappos*, 95 USPQ2d 1001 (U.S. 2010), although the claim language includes a plurality of modules, there is insufficient recitation of a machine or transformation, and/or wherein involvement of machine, or transformation with the steps is merely nominally, insignificantly, or tangentially related to the performance of the steps, e.g., data gathering, or merely recites a field in which the method is intended to be applied (emphasis added). Here, the steps merely receive data (i.e., data gathering).

With respect to independent claim 1, and similarly independent claims 9, 17, 25, 37 and 40, Applicant argues neither Miller nor Christiansen teaches or suggests defining a base level segmentation tree with a base level data set at a first top level node, defining a set of alternative level variables associated with an alternative level data set at a second top level node, and determining substitute split values for each subsequent node of the substitute level tree. Thus, no combination of these references can result in such a recitation. The Examiner respectfully disagrees.

First, Miller et al disclose populations split according to a plurality of decisions, ¶ 0021, including nodes 2-13 of figure 4 based upon decisions 1-6, but implemented in a different arrangement. As such, the population splits implemented in different arrangements, including different top level nodes, are indeed substitute split values for each subsequent node of the substitute level tree based on the base level data set at the first top level node and the alternative level data set at the second top level node. However, while Miller does not explicitly disclose different levels of precision

defining the alternate level data set and substitute level tree, Heckerman et al as been cited as teaching an alternative level data set at a second top level node having an alternate precision different than the base level data set, a substitute level tree having a substitute precision different from the base precision, and up and down shifting between levels of the base precision and the substitute precision, as seen in the updated rejection above.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (571)272-6726. The examiner can normally be reached on 9:30-6pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andre Boyce/
Primary Examiner, Art Unit 3623
December 13, 2010